Course Description

A significant share of sociological research uses quantitative methods (e.g., statistical analyses) to investigate social phenomena. These researchers use large national surveys, public opinion polls, and census data to document, describe, and explain a wide range of sociologically motivated research questions. As students of this body of research, it is important to have a basic understanding of statistics if one is to be an active participant in the local, regional, national, and international dialog within the sociological community. The primary goal of this class is to provide each student with the requisite skills to not only understand the mainstream sociological research but also to be critical consumers of statistical information that is often presented as “factual”. Although the primary emphasis is on social research, the information and skills that you will learn in this class will be applicable to most academic and non-academic careers.

The course is divided into three sections that focus on descriptive statistics and inferential Statistics and various applied statistical techniques. Descriptive statistics are methods that allow you to present a set of scores in a parsimonious summary form that measure individual and social characteristics (e.g., socioeconomic status, self-esteem, residential segregation). The primary concepts that we emphasize are central tendency (e.g., mean, mode, median) and dispersion (e.g., standard deviation, variance, inter-quartile range). Inferential Statistics is the backbone of statistical reasoning and it involves making estimates about a population (e.g., the entire country) based on a sample (e.g., a random selection of people from the country). This process necessarily involves the invocation of the basic rules of probability and it will introduce you to hypothesis testing which is used throughout the physical, behavioral, and social sciences. We will also cover bivariate and multivariate statistical techniques in great detail and you will have an opportunity to examine data using the statistical software R.

Course Requirements

Participation (5%): Attendance in lecture and recitation section is mandatory. Any changes in the course syllabus and other announcements will be made in class and students are responsible for this information.

Examinations (60%): There are three in-class examinations (see schedule below). Each examination is cumulative and each is worth 20% of your overall grade. Any missed examination will result in a score of 0 and make-up examinations will be given only in the case of a documented emergency. All examinations will count the same toward your overall grade. The third examination will be held during the final examination time but is still designed to be a 50 minute test.

Problem Sets (35%): There are 7 homework assignments in the class. Each assignment is worth 5% of your overall grade. Late homework will only be accepted in the case of a documented emergency.
SCHEDULE

Section 1: Descriptive statistics
Week 1: Jan 13-Jan 15 – Introduction to data, statistics, and R (Read: Chapter 1)
Week 2: Jan 20-Jan 22 – Graphic presentation of data (Read: Chapter 2)
   **Homework 1: Due Tuesday, January 27th**
Week 3: Jan 27-Jan 29 – Central Tendency (Read: Chapter 3)
Week 4: Feb 3-Feb 5 – Dispersion (Read: Chapter 4)
   **Homework 2: Due Tuesday, February 10th**
   **Examination # 1— Tuesday, February 10th**

Section 2: Inferential Statistics
Week 5: Feb 12 – The normal distribution (Read: Chapter 5)
Week 6: Feb 17-Feb 19 – Sampling and sampling distributions (Read: Chapter 6)
   **Homework 3: Due Tuesday, February 24th**
Week 7: Feb 24- Feb 26 – Estimation and confidence intervals (Read: Chapter 7)
Week 8: Mar 3-Mar 5 – Hypothesis Testing (Read: Chapter 8)
   **Homework 4: Due Tuesday, March 10th**
Week 9: Mar 10-Mar 12 – Hypothesis Testing Difference in Groups (Read: Chapter 8)
Week 10: Mar 17 – Review of inferential statistics (Read: Chapter 8)
   **Homework 5: Due Thursday, March 19th**
   **Examination #2 – Thursday, March 19th**

Section 3: Bivariate Statistical Techniques
Week 11: Mar 31- Apr 2 – Chi square test of independence (Read: Chapter 9)
Week 12: Apr 7- Apr 9 – Analysis of Variance (Read: Chapter 10)
   **Homework 6: Due Tuesday, April 14th**
Week 13: Apr 14-Apr 16 – Correlation (Read: Chapter 11)
Week 14: Apr 21-Apr 23 – Bivariate regression (Read: Chapter 11)
Week 15: Apr 28-Apr 30 – Bivariate regression (Read: Chapter 11)
   **Homework 7: Due Sunday, May 3rd**
   **Examination #3 – Sunday May 3rd 4:30-7:00pm**

Communications: Email is an official form of communication. You are responsible for checking your University of Colorado official email address on a regular basis. **To send me an email, you must use SOCY2061 as the subject of your email (NO SPACE).** This can be followed by whatever subject you’d like (e.g. SOCY2061: homework #3) but your message must start with SOCY2061. I will read and respond to email sent to me from this class only during my office hours. I will not respond to email without this heading. Lectures and other handouts will be made available on D2L.

Policies for Students with Special Needs
If you qualify for accommodations because of a disability, please submit to me a letter from Disability Services (DS) early in the semester so that your needs may be addressed. DS determines accommodations based on documented disabilities (303-492-8671, Willard 322, www.colorado.edu/sacs/disabilityservices)

Religious Holidays
Please contact the instructor regarding any conflicts between religious observance dates and course requirements.

Classroom Behavior and Honor Code Policies
As a result of extensive discussions with and recommendations from faculty and students, a new classroom behavior policy procedures and honor code system have been adopted by the University. Please see (http://www.colorado.edu/policies/index.html) and (http://www.colorado.edu/academics/honorcode/) for more information, respectively.